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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/692,331	10/23/2003	James L. Jones III	65783-0031	9124

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EXAMINER

CAVALLARI, DANIEL J .

ART UNIT PAPER NUMBER

2836

DATE MAILED: 03/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/692,331

Applicant(s)

JONES ET AL.

Am

Examiner

Daniel J. Cavallari

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 and 20-25 is/are rejected.
- 7) ☒ Claim(s) 17-19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/23/2003.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 10/23/2003 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Drawings

The drawings are objected to under 37 CFR 1.83(a) because they fail to show the connection of the first and second relay(s) with it's associated load(s). The current drawings show a single square which does not adequately show the connection of the two separate power inputs into each relay(s) as well as the load connections to device (400 & 410) as described in the specification.

Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief

description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claims 1, 2, 5, 8, 12, 13, 18, & 20 are objected to because of the following informalities:

The limitation of "a first set of relays" and a "second set of relays" for providing power to "at least one device.." is unclear. It is unclear why a "set" of relays would be necessary for only a single device. The claim will be examined as best understood to mean " a first relay" and a "second relay".

Claim 17 is objected to because of the following informalities:

The limitation "... so that a voltage generated by said primary power feed and applied to said gate controls an operating state of said transistor." appears to be missing proper punctuation as the power feed is "applied to said gate" and "controls the operating state of said transistor" and the power feed is not "applied to said gate

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controls” as no “gate controls” has been previously disclosed therefore creating an antecedent basis problem. The claim will be examined as best understood to read “... so that a voltage generated by said primary power feed and applied to said gate, controls an operating state of said transistor.”

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-9, 11-16, & 20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda et al. (US 6,127,741) & Deguchi (US 2004/0041473 A1).

Matsuda et al. (hereinafter referred to as Matsuda) teach

In regard to claims 1, 6, 7, 12, 13, 14, 15, 22, & 25

- A power distribution node of a vehicle read on by components (5 and 6) of Figure 2.
- A primary power feed, read on by line T2 and a secondary power feed read on by line T1 (See Figure 2 & Column 9, Lines 14-34).

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- A first switch (321, See Figure 4) of component (6) of Figure 1, for selectively providing power to at least one device (23) of a first class (Class A or B) considered unimportant for a safe operation of the vehicle, read on by a radio (See Column 21, Lines 3-12)
- A second switch (321, See Figure 4) of component (5) of Figure 1, for selectively providing power to at least one device of a second class (Class C) considered important for the safe operation of the vehicle, read on by headlights (See Column 18, Lines 38-45).
- Under a normal operating state, the first class device (load 23 of component 6 of Figure 1) is selectively powered by the primary power feed (T2) and a second class device (load 23 of component 5 of Figure 1) is selectively powered by the second switch (321 of component 5 of Figure 1).
- Upon disruption of the primary power feed (T2), a second class device (load 23 of component 5 of Figure 1) is selectively powered by said secondary power feed (T1) by the second switch (321 of component 5 of Figure 1) read on by a short circuit occurring in feed line 11 (See Column 14, Line 44-59 & Column 15, line 1-12).

Matsuda teach switches (321) connecting the individual vehicle loads to the power supply however, is silent as to the particular type of switch used for switch (321) (See Figure 4 & Column 18, Lines 38-45).

Deguchi teaches a vehicle power supply (See Paragraph 2) incorporating individual relays (9, 10) in which to connect loads (11 & 12) both connected to the same supply line of the auxiliary battery (1) under the control of a processor (8) (See Figure 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the relays taught by Deguchi in place of the switches (321) taught by Matsuda who is silent in regards to what type of switches are used. The motivation would have been to provide the vehicle loads of Matsuda with a well known and reliable switch capable of providing sufficient current to the vehicle loads.

Matsuda further teaches:

In regard to Claims 2, 3, & 5

- A first switch (read on by breaker 13 [See Figure 2] of component 5 [See Figure 1]) selectively connecting the second relay (switch 321 [See Figure 4] of component 5 [See Figure 2]) to the primary power feed (T2) and a second switch (read on by breaker 14 [See Figure 2] of component 5 [See Figure 1]) selectively connecting the second relay (switch 321 [See Figure 4] of component 5 [See Figure 2]) to the secondary power feed (T1), wherein the first switch is closed and the second switch is open while the system is operating in the normal operating state and the first switch is open and the second switch is closed upon a disruption of the primary power feed (as is the case when the system is

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normally open at component (4) and a fault occurs on line 11 (See Figure 2 & Column 14, Line 44-59 & Column 15, line 1-12).

In regard to Claim 4

- Wherein disruption in said primary power feed (T2) occurs when said primary power feed (T2) is placed in a short-circuit (See Column 10, Lines 21-24).

In regard to Claims 8, 20, & 23

- A processor (control unit 30) (See Figure 4) that selectively operates the first and second switches (321) (See Column 18, Lines 58-67).

In regard to Claims 9, 21, & 24

- The processor (30) receives power through a first diode (35) or from a second diode (36) (See Figure 4) in which the diodes are used to isolate the first and second power feeds when the switches are used as an open point (See Column 14, Line 44-59 & Column 15, line 1-12 & Column 18, Lines 28-37).

In regard to Claims 11 & 16

- The first switch (breaker 13) and second switch (breaker 14) comprising of transistors (MOSFET) (See Column 10, Lines 11-15).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda et al., Deguchi, & George et al. (US 2004/0066168 A1).

Incorporating all arguments above, Matsuda fail to teach a regulator attached to the power supply to power the processor.

George et al. (hereinafter referred to as Geaorge) teaches a controller (44) attached to the power supply through a regulator (58) (See Figure 1 & Paragraph 35).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the voltage regulator taught by George into the power system of Matsuda connecting the regulator (58) to the control unit (30) powered by the power supply diodes (35 & 36) (See Figure 4 of Matsuda).

The motivation would have been to provide the processor with a stable voltage supply and allow for the replacement of the processor (30) with different processors with varying voltage requirements.

Allowable Subject Matter

Claims 17, 18 & 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Although prior art teaches the transistor switch of claim 17 (See Column 10, Lines 11-15), prior art fails to teach the configuration wherein a voltage of a power feed is applied to the gate, thereby controlling the transistor which connects the second set of device to a secondary power feed.

Prior art fails to teach the configuration of switches wherein a first, second and third transistor are used to connect first and second electrical devices based on the presence of a disruption in a primary power feed.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Dougherty et al. (US 5,488,283) teaches a vehicle battery system with battery back-up.
- Baumgartner et al. (6,607,251) teaches a multiple power source and circuit protection circuit for a vehicle.
- Shi (US 5,654,859) teaches a fault tolerant power distribution system.

- Koenig (US 6,737,762) teaches an uninterruptible power supply system which switches between a primary and secondary source and contains critical and non-critical loads (See figure 4)
- Farber et al. (US 4,757,249) teaches a dual power supply system for multiple loads.
- Kato et al. (US 5,856,711) teaches a power supply distribution system for vehicles.
- Kuramochi et al. (US 2005/0035656 A1) teaches a power supply system for a vehicle comprising two sources and multiple loads.
- Wood (US 2005/0029867 A1) teaches a power supply system for a vehicle.
- Richter et al. (US 2003/0062773) teaches a power supply system with two sources and multiple loads.
- Eisenberger et al. (US 2004/0124709 A1) teaches an uninterruptible power supply system for a vehicle.
- Yokoyama et al. (US 2003/0030322 A1) teaches a multi source power supply system for a motor vehicle with multiple loads.
- Masaoka (US 2001/0024064 A1) teaches a vehicle power supply system with multiple supply line and multiple loads.
- Ito et al. (JP 09074669) teaches a short circuit backup power supply for vehicles.
- Ito (JP 08275408 A) teaches a short circuit backup power supply for vehicles.
- Ito (JP 09046928 A) teaches a short circuit backup power supply for vehicles.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Cavallari whose telephone number is (571)272-8541. The examiner can normally be reached on Monday-Friday 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571)272-2800 x36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel Cavallari

March 9, 2006



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